

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-7. (Canceled)

8. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

a first step of forming a gate wiring over an insulating surface;

a second step of forming an insulating film covering the insulating surface and the gate wiring;

a third step of forming a first amorphous semiconductor film over the insulating film;

a fourth step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

a fifth step of forming a conductive film comprising metallic material over the second amorphous semiconductor film; [[and]]

a sixth step of etching the conductive ~~film and film~~, the [[first]] second amorphous semiconductor film and the ~~second~~ first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

a seventh step of forming a transparent conductive film over the conductive film; and

an eighth step of etching ~~a part of the first amorphous semiconductor film and the transparent conductive film and film~~, the conductive ~~film and film~~, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor ~~film and film~~, to form a pixel electrode from the transparent conductive ~~film and film~~, to form a source wiring from the conductive film

and to form a source region and a drain region from the second amorphous semiconductor film.

9. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

a first step of forming a gate wiring over an insulating surface;

a second step of forming an insulating film covering the insulating surface and the gate wiring;

a third step of forming a first amorphous semiconductor film over the insulating film;

a fourth step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

a fifth step of forming a conductive film comprising metallic material over the second amorphous semiconductor film;

a sixth step of etching ~~the insulating film and~~ the conductive film, the ~~[[first]] second~~ amorphous semiconductor film ~~and film~~, the ~~second~~ first amorphous semiconductor film and the ~~conductive~~ insulating film to form a side edge of the first amorphous semiconductor film into a taper shape;

a seventh step of forming a transparent conductive film over the conductive film; and

an eighth step of etching ~~a part of the first amorphous semiconductor film and the transparent conductive film and film~~, the ~~conductive film and film~~, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film ~~and film~~, to form a pixel electrode from the transparent conductive ~~film and film~~, to form a source wiring from the conductive film and to form a source region and a drain region from the second amorphous semiconductor film.

10. (Currently Amended) ~~[[A]]~~ The method of manufacturing ~~[[a]]~~ the semiconductor device according to one of claim 8 ~~[[or]]~~ and claim 9, wherein in the sixth step, the conductive ~~film and~~ film, the second amorphous semiconductor film and the first amorphous semiconductor film are etched with a chlorine type gas.

11. (Currently Amended) ~~[[A]]~~ The method of manufacturing ~~[[a]]~~ the semiconductor device according to ~~any one of claims 8 to 10~~ one of claim 8 and claim 9, wherein in the eighth step, the conductive film, ~~a part of the~~ ~~[[first]]~~ second amorphous semiconductor film ~~and the conductive film~~ and the second first amorphous semiconductor film are etched with a chlorine type gas.

12. (Currently Amended) ~~[[A]]~~ The method of manufacturing ~~[[a]]~~ the semiconductor device according to ~~any one of claims 8 to 11~~ claim 10, wherein the chlorine type gas ~~[[is]]~~ contains at least one selected from the group consisting of Cl_2 and Cl_2 , BCl_3 , HCl and SiCl_4 ~~or a gas containing a plurality of gases selected from these gases.~~

13. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

- ~~a step of~~ forming a gate wiring over an insulating surface;
- ~~a step of~~ forming an insulating film over the insulating surface and the gate wiring;
- ~~a step of~~ forming a first amorphous semiconductor film over the insulating film;
- ~~a step of~~ forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;
- ~~a step of~~ forming a conductive film over the second amorphous semiconductor film; ~~[[and]]~~

~~a step of etching the conductive film and film,~~ the ~~[[first]]~~ second amorphous semiconductor film and the ~~second~~ first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

~~a step of forming a transparent conductive film over the second amorphous semiconductor film; and~~

~~a step of etching the transparent conductive film and film,~~ the conductive film and the second amorphous semiconductor film to form a pixel electrode, a source ~~wiring and wiring~~, a source region and a drain region,

wherein the conductive film contains at least one of aluminum ~~[[or]]~~ and titanium, and

wherein the first amorphous semiconductor film is etched into ~~[[a]]~~ the taper shape with a mixture gas of Cl_2 and BCl_2 .

14. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

~~a step of forming a gate wiring over an insulating surface;~~

~~a step of forming an insulating film over the insulating surface and the gate wiring;~~

~~a step of forming a first amorphous semiconductor film over the insulating film;~~

~~a step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;~~

~~a step of forming a conductive film over the second amorphous semiconductor film;~~

~~a step of etching the conductive film,~~ the ~~[[first]]~~ second amorphous semiconductor film and the ~~second~~ first amorphous semiconductor film ~~and the conductive film~~ to form a side edge of the first amorphous semiconductor film into a taper shape;

~~a step of forming a transparent conductive film over the second amorphous semiconductor film; and~~

~~a step of etching the transparent conductive film and film, the conductive film and the second amorphous semiconductor film to form a pixel electrode, a source wiring and wiring, a source region and a drain region,~~

wherein the conductive film contains at least tantalum, and

wherein the first amorphous semiconductor film is etched into ~~[[a]]~~ the taper shape with a mixture gas of Cl_2 and CF_4 .

15. (Currently Amended): A method of manufacturing a semiconductor device, comprising:

~~a step of forming a gate wiring over an insulating surface;~~

~~a step of forming an insulating film over the insulating surface and the gate wiring;~~

~~a step of forming a first amorphous semiconductor film over the insulating film;~~

~~a step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;~~

~~a step of forming a conductive film over the second amorphous semiconductor film;~~

~~a step of etching the conductive film, the [[first]] second amorphous semiconductor film and the second first amorphous semiconductor film and the conductive film to form a side edge of the first amorphous semiconductor film into a taper shape;~~

~~a step of forming a transparent conductive film over the second amorphous semiconductor film; and~~

~~a step of etching the transparent conductive film and film, the conductive film and the second amorphous semiconductor film by etching to form a pixel electrode, a source wiring and wiring, a source region and a drain region,~~

wherein the conductive film contains at least tungsten, and

wherein the first amorphous semiconductor film is etched into ~~[[a]]~~ the taper shape with one of a mixture gas of ~~Cl₂ and Cl₂~~, CF₄ and O₂ ~~[[or]]~~ and a mixture gas of ~~Cl₂ and Cl₂~~, SF₆ and O₂.

16. (New) The method of manufacturing the semiconductor device according to claim 11, wherein the chlorine type gas contains at least one selected from the group consisting of Cl₂, BCl₃, HCl and SiCl₄ .

17. (New) The method of manufacturing the semiconductor device according to any one of claims 13 through claim 15, wherein a chlorine type gas is used in the step of etching the transparent conductive film, the conductive film and the second amorphous semiconductor film.

18. (New) The method of manufacturing the semiconductor device according to claim 17, wherein the chlorine type gas contains at least one selected from the group consisting of Cl₂, BCl₃, HCl and SiCl₄ .

19. (New) A method of manufacturing a semiconductor device, comprising:
forming a gate wiring over an insulating surface;
forming an insulating film covering the insulating surface and the gate wiring;
forming a first amorphous semiconductor film over the insulating film;
forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;
forming a conductive film comprising metallic material over the second amorphous semiconductor film;

etching the conductive film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film over the conductive film; and

etching the transparent conductive film, the conductive film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the conductive film and to form a source region and a drain region from the second amorphous semiconductor film.

20. (New) A method of manufacturing a semiconductor device, comprising:

forming a gate wiring over an insulating surface;

forming an insulating film covering the insulating surface and the gate wiring;

forming a first amorphous semiconductor film over the insulating film;

forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

forming a conductive film comprising metallic material over the second amorphous semiconductor film;

etching the conductive film, the second amorphous semiconductor film, the first amorphous semiconductor film and the insulating film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film over the conductive film; and

etching the transparent conductive film, the conductive film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the conductive film and to form a source region and a drain region from the second amorphous semiconductor film.

21. (New) The method of manufacturing the semiconductor device according to claim 19, wherein a chlorine type gas is used in the step of etching the conductive film, the second amorphous semiconductor film and the first amorphous semiconductor film.

22. (New) The method of manufacturing the semiconductor device according to claim 20, wherein a chlorine type gas is used in the step of etching the conductive film, the second amorphous semiconductor film, the first amorphous semiconductor film and the insulating film.

23. (New) The method of manufacturing the semiconductor device according to one of claim 19 and claim 20, wherein a chlorine type gas is used in the step of etching the transparent conductive film, the conductive film, the second amorphous semiconductor film and the first amorphous semiconductor film.

24. (New) The method of manufacturing the semiconductor device according to one of claim 19 and claim 20, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

25. (New) The method of manufacturing the semiconductor device according to claim 23, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .